

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS

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PART 622. CONTROL MEASURES FOR HAZARDOUS ATMOSPHERES IN CONFINED SPACES FOR CONSTRUCTION

Rule 6402 Control Measures for Hazardous Atmospheres in Confined Spaces

(1) Confined spaces -- General requirements.

(a) Confined space - For purposes of this rule, "confined or enclosed space" means any space having a limited means of egress, which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, and open top spaces more than 4 feet in depth such as pits, tubs, vaults, and vessels. [1926.21(b)(6)(ii)]

(b) All employees required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas. [1926.21(b)(6)(i)]

(2) Atmosphere testing in confined spaces. In locations where oxygen deficiency or gaseous conditions are possible, air in the excavation, as defined in Rule 6310(9)(a), shall be tested. Controls, as set forth in Parts II, III, V, and VI of this chapter, shall be established to assure acceptable atmospheric conditions. When flammable gases are present, adequate ventilation shall be provided or sources of ignition shall be eliminated. Attended emergency rescue equipment, such as breathing apparatus, a safety harness and line, basket stretcher, etc., shall be readily available where adverse atmospheric conditions may exist or develop in an excavation. [1926.651(v)]

(3) Underground lines.

(a) Definitions applicable to this subsection.

(i) "Alive or live (energized)" means electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of the earth in the vicinity. The term "live" is sometimes used in place of the term "current-carrying", where the intent

is clear, to avoid repetition of the longer term. [1926.960(a)]

(ii) "Barrier" means a physical obstruction which is intended to prevent contact with energized lines or equipment. [1926.960(c)]

(iii) "Barricade" means a physical obstruction such as tapes, screens, or cones intended to warn and limit access to a hazardous area. [1926.960(d)]

(iv) "Cable" means a conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable) or a combination of conductors insulated from one another (multiple-conductor cable). [1926.960(g)]

(v) "Designated employee" means a qualified person delegated to perform specific duties under the conditions existing. [1926.960(o)]

(vi) "Equipment" is a general term which includes fittings, devices, appliances, fixtures, apparatus, and the like, used as part of, or in connection with, an electrical power transmission and distribution system, or communication systems. [1926.960(s)]

(vii) "Guarded" means protected by personnel, covered, fenced, or enclosed by means of suitable casings, barrier rails, screens, mats, platforms, or other suitable devices in accordance with standard barricading techniques designed to prevent dangerous approach or contact by persons or objects. Note: Wires, which are insulated but not otherwise protected, are not considered as guarded. [1926.960(v)]

(viii) "Manhole" means a subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating and maintaining equipment and/or cable. [1926.960(jj)]

(ix) "Qualified person" means a person who by reason of experience or training is familiar with the operation to be performed and the hazards involved. [1926.960(ll)]

(x) "Vault" means an enclosure above or below ground which personnel may enter and is used for the purpose of installing, operating, and/or maintaining equipment and/or cable. [1926.960(pp)]

(b) Guarding and ventilating street opening used for access to underground lines or equipment.

(i) Appropriate warning signs shall be promptly placed when covers of manholes, handholes, or vaults are removed. What is an appropriate warning sign is dependent upon the nature and location of the hazards involved. [1926.956(a)(1)]

(ii) Before an employee enters a street opening, such as a manhole or an unvented vault, it shall be promptly protected with a barrier, temporary cover, or other suitable guard. [1926.956(a)(2)]

(iii) When work is to be performed in a manhole or unvented vault: [1926.956(a)(3)]

(A) No entry shall be permitted unless forced ventilation is provided or the atmosphere is found to be safe by testing for oxygen deficiency and the presence of explosive gases or fumes. [1926.956(a)(3)(i)]

(B) Where unsafe conditions are detected, by testing or other means, the work area shall be ventilated and otherwise made safe before entry. [1926.956(a)(3)(ii)]

(C) Provisions shall be made for an adequate continuous supply of air. [1926.956(a)(3)(iii)]

(c) Work in manholes.

(i) While work is being performed in manholes, an employee shall be available in the immediate vicinity to render emergency assistance as may be required. This shall not preclude the employee in the immediate vicinity

from occasionally entering a manhole to provide assistance, other than emergency. This requirement does not preclude a qualified employee, working alone, from entering for brief periods of time, a manhole where energized cables or equipment are in service, for the purpose of inspection, housekeeping, taking readings, or similar work if such work can be performed safely. [1926.956(b)(1)]

(ii) When open flames must be used or smoking is permitted in manholes, extra precautions shall be taken to provide adequate ventilation. [1926.956(b)(2)]

(iii) Before using open flames in a manhole or excavation in an area where combustible gases or liquids may be present, such as near a gasoline service station, the atmosphere of the manhole or excavation shall be tested and found safe or cleared of the combustible gases or liquids. [1926.956(b)(3)]

(d) Trenching and excavating. Trenching and excavation operations shall comply with Rule 6310(9). [1926.956(c)(2)]

(e) Welding, cutting, and heating in confined spaces. See Rule 6310(3)(c).